

REMARKS

Claims 1-3, 5-8, 14-22, 25 and 29-31 are pending and under consideration.

On page 2 of the Office Action, the Examiner rejects claims 1-3, 5-6, 14-17, and 29-31 under 35 U.S.C. § 103 over previously cited Kelsey et al. (US 6,093,789) ("Kelsey") in view of newly cited Ciba Irganox 5057 documentation ("Ciba"). It appears that the Examiner is relying upon Kelsey primarily for Component A. The Examiner modifies Kelsey by incorporating Irganox 5057 of Ciba to disclose the claimed Component B.

Ciba describes using Irganox 5057 in combination with hindered phenols as a co-stabilizer. Ciba teaches that Irganox 5057 may provide long-term thermal stabilization, preventing thermal degradation of polymers even at low concentrations.

However, one of ordinary skill in the art would not have combined Ciba with Kelsey. Ciba teaches that the main application for Irganox 5057 is as a co-stabilizer in **polyurethane foams**. Polyurethane is chemically different from polytrimethylene terephthalate in a number of ways. In contrast to polytrimethylene terephthalate, the polyurethane repeating unit includes: two secondary amines; an additional aromatic ring; and three methyl groups, only two of which are adjacently bonded. The ester groups are also positioned further apart and with different functional groups between them. It would not have been obvious for a polyurethane stabilizer to be effective for polytrimethylene terephthalate. Further, the Ciba document describes that Irganox 5057 is added to a process involving diisocyanate, polyol, and water, which of course is different from a PTT process. One would not expect for Irganox 5057 to work in a different chemical process. Ciba also teaches adding Irganox 5057 to elastomers, adhesives, and other organic substrates. Kelsey, on the other hand, is directed to producing polyester fibers.

Ciba describes that typical use levels for Irganox 5057 as a co-stabilizer are between 1000-4000 ppm. Based on the examples, it appears that Kelsey is using a significantly smaller amount of its hindered phenol stabilizer. If Irganox 5057 were added to Kelsey based on the teachings of Ciba, this would require Kelsey to greatly increase the total amount of stabilizer used in its process. The amounts are incompatible.

In summary, a person of ordinary skill in the art would not have conceived of the unexpected benefits provided by a secondary amine structure (Component B) combined with a hindered phenol (Component A) for the specific resin i.e., polytrimethylene terephthalate, because Ciba is entirely different from the present invention in the purpose of using the secondary amine structure and the method for using it.

While the claims are directed to a product, not a process, applicants again note that Kelsey strongly prefers adding the hindered phenol during polymerization. Kelsey favors addition during the vacuum step for improved color or addition to the reaction mixture during the pressure step of melt polycondensation for minimized acrolein generation. See Kelsey at column 5, line 61 through column 6, line 2. On the other hand, the process described in the present application favors addition after polycondensation. The specification describes an improved color and minimal acrolein can be achieved by adding Components A and B after polymerization. See paragraph [0048] of the published application. Components A and B may be added after polymerization, but before cooling and solidification or to a once solidified polymer that has been re-melted. Because of the great differences from Kelsey in the desired position and desired timing at which stabilizers are added, the stabilizers of the present invention would work in a manner different from Kelsey. That is, the technical idea of the present invention is different from Kelsey. Accordingly, neither Kelsey nor the Ciba document, taken alone or in any proper combination, disclose or suggest the claimed invention.

On page 4 of the Office Action, the Examiner rejects claims 7-8, 18-22, and 35 under 35 U.S.C. § 103 over Kelsey in view of Ciba and previously cited Kikuchi et al. (US 4,897,438) ("Kikuchi"). Kikuchi et al. is cited only for a thioether compound added in an amount of 0.01 to 5 parts by weight. Kikuchi et al. does not compensate for the deficiencies discussed above with regard to Kelsey and Ciba. Accordingly, claims 7, 8, 18 – 22, and 25 patentably distinguish over the cited references.

There being no further outstanding objections or rejections, it is submitted the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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